

W.J. Hancock, Engineer and Pioneer Radiographer

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SUMMARY: The paper is a biography of William John Hancock, Western Australia's first Superintendent of Telephones and also that State's pioneer radiographer.

1. INTRODUCTION

W J Hancock was born at Dublin in 1863 and subsequently studied engineering at Glasgow University. After some experience in his native country he came to Western Australia as that colony's first Superintendent of Telephones in 1886. Hancock subsequently constructed Western Australia's first two telephone exchanges at Perth and Fremantle in 1887/88.

He transferred to the Public Works Department (PWD) in 1894 where he practised electrical engineering until his retirement in 1921.

Hancock is best remembered as WA's first radiographer. He initially purchased equipment from his own funds and was honorary radiographer at Perth Public Hospital (now Royal Perth Hospital) [henceforth RPH] for twenty-two years.

For his work in radiography Hancock was honoured both before and after his death in 1931.

The paper concentrates on those aspects of Hancock's life and activities that have not been previously accentuated or documented.

2. 1863 - 1886

William John Hancock was born at Dublin on 2 May 1863, son of William John Hancock, actuary, and his wife Annette¹. At the age of 16 he went to study engineering at Glasgow University under his uncle by marriage, James Thomson, Professor of Civil Engineering and Mechanics. William attended classes for two sessions, 1879-80 and 1880-81, during which time he resided with his uncle.²

James Thomson's brother, William Thomson, later Lord Kelvin, was Professor of Natural Philosophy at Glasgow University at that time.

Hancock served his pupilage under Mr Alex McDonald M.I.C.E. from 1881 - 1884, mainly in railway type works. He listed his subsequent experience as "training as Assistant to the Electric Light & Telephone Companies of Ireland" 1884 - 1886.³

Hancock's move to Western Australia was brought about by the death of James Fleming. Fleming, a former convict and an Associate Member of the Society of Telegraph Engineers and Electricians, London, (later IEE) had capably discharged the duties of WA's Superintendent of Telegraphs for some years. As the result of an accident, he died in mid-1885.

No doubt following this the WA Government cast about for a replacement. No papers have survived on the matter except a listing in a file register of "W J Hancock - Telephonist - re employment as ".⁴ It seems that file clerks in those days knew little of designations of staff in technical areas!

The Western Australian Civil Establishment List of 1886 shows W J Hancock as being appointed as Superintendent of Telephones in the Works and Railways Department, from January 1886 at a salary of 100 pounds per annum. It is not known why the Superintendency changed from "Telegraphs" to "Telephones".

Hancock's date of arrival in WA is a mystery. He could only have come by ship but he is not listed among passengers arriving in late 1885 - early 1886. (Some of his family believe he may have been in Melbourne before coming to Perth) The first mention of his presence is a newspaper article of March 1886 saying that he had been in Perth "for a couple of months."⁵

His first piece of work was to examine an ailing submarine

cable, laid the year before, between Breaksea Island lighthouse in King George's Sound and the mainland. This was an important telephone link in the reporting of the arrival of British mail steamers at Albany, their first Australian port of call. Hancock found the cable "beyond repair" and ordered a replacement.

At that time all Australian capital cities except Perth, had public telephone exchanges. The WA Government had been unable to obtain public support for such a venture, but finally decided in 1886 that it should go ahead.



WILLIAM JOHN HANCOCK, 1863-1931
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On his return from Albany, Hancock set about ordering equipment for the Perth and Fremantle exchanges.⁶ He also arranged for the erection of poles and wires in both towns. There were spasmodic mentions of this activity in the press.

3. 1887 - 1894

No official papers or press reports cover the opening of Perth's first telephone exchange on 1 December 1887. The letter of appointment of WA's first telephonist, Miss Connie Letch at Perth has survived. She was to receive 12 shillings per week commencing from 1 December 1887.^{7,8} The Fremantle exchange opened soon after, in January 1888, again the exact date being open to conjecture.

During this period the telegraph system of WA was also expanding. The actual work was done by contractors, under the supervision of the PWD, the department then employing Hancock. He recounted some of his experiences in later years.⁹ These included problems with termites in wooden poles, lack of water for linemen on long stretches and difficulty with signalling due to the so-called sea mists on the northern and intercolonial (via Eucla) lines. There were also some problems with natives stealing insulators to make spear points and the like, Hancock said; but in the North where this was prevalent, relief came from an unexpected quarter. The Kimberley goldfields were opened and brought new material (for the natives) in the form of broken whisky and gin bottles.

The first attempt at a public electricity supply in Hay Street, Perth was made in 1888 using a 15 kilowatt generator. Hancock described how, soon after, he temporarily rigged telephone wires to nearby Government House in order to carry current to illuminate the ballroom for a special event at the request of Governor Broome.

Membership records of the Institution of Electrical Engineers, London, (IEE) show that Hancock was elected as a Student of the Society of Telegraph Engineers and Electricians (name of the Institution before 1888) in December 1882, and was transferred to the class of Associate in January 1884. He was elected as a Member in April 1888 because of his position as Superintendent of Government Telephones of Western Australia.

In 1890 various WA Government departments were reorganised. Public Works and Railways were separated, also the telephone system was transferred to the Postal and Telegraph Department. Hancock was also transferred to the P&T Department, but he was still left in charge of the Railway telephone system. He then held the dual titles of Superintendent of Telephones in the Railway Department and Superintendent of Telephones and Telegraphs in the Postal and Telegraph Department.¹⁰ The latter title was ratified by the Colonial Office, London some months later.¹¹ This made Hancock an officer of the Imperial Service, rather than of the Colonial Service, a point he laboured in later life in regard to pension entitlements.

The original telephone switchboards in Perth were soon in need of extension. Hancock installed a larger switchboard, imported from Chicago in 1892. This was placed in the then GPO in Saint George's Terrace.

William Hancock was the only person in the P&T Department with professional qualifications. Also, he was still young and would have stood out from the other senior men of the department, who had all gained their posts through long job experience.

Richard Sholl, WA's Postmaster-General (administrative head of the P&T Department) was a difficult man to work for as a number of extant papers show. He also interfered in the day to day workings of all aspects of his department.¹² In 1893 Sholl (in Hancock's words) began to 'persecute' Hancock. It seems that Sholl was going to vary the responsibilities of, or do away with, the office of Superintendent of Telegraphs (which was by now the title of Hancock's position - "telegraphs" embracing both telegraphs per se and telephones). Hancock appealed to the Minister but Sholl would not forward the letter.

Hancock again wrote to Sholl pointing out the office of Superintendent of Telegraphs could not compare to any other Head of Department in the WA Government service, except perhaps that of Engineer-in-Chief of the PWD. Sholl again refused to forward the papers to the Minister or Premier. Hancock then applied for and was granted long service leave from 1 August 1893.¹³ He never returned to the service of the P&T Department.

While on leave Hancock travelled to Europe where he inspected various engineering works. In London he also placed an application for a patent for a new design of telegraph insulator bracket.¹⁴ The patent was never issued, but apparently the British Post Office showed great interest in the design.¹⁵

Upon his return to WA in mid-1894 Hancock was appointed Government Electrician and Electrical Engineer in the Public Works Department at an annual salary of 350 pounds.¹⁶ No doubt Hancock relished this post, surrounded as he was by other professional men - in distinct contrast to the P&T Department. The part-title of "Government Electrician" probably referred to his continuing association with construction of telegraph systems for both the Postal and Railways departments.

4. 1895 - 1914

In December 1895 the discovery of X-rays by Roentgen at the University of Wurzburg in Bavaria was announced.¹⁷ Hancock was one of the many people around the world whose interest was fired. He cabled London and had some apparatus sent to Perth, purchased with his private funds. It is thought that he first produced X-rays in Perth in August 1896.

(The first radiograph produced in Australia is that of a rat's body, taken by G W Selby in Melbourne. It was reproduced by the Australasian of 16 May 1896. Apparently more or less straight away Selby was engaged in medical X-ray work.¹⁷)

The apparatus which Hancock had purchased was installed in the laboratory attached to the Government Electrician's Office in Murray Street, Perth.

The Medical Department realising the importance of X-rays in medical work, made available a room in the Department, then in nearby Pier Street, to which, by invitation of the Department, Hancock's apparatus was removed. In 1897, in consequence of the increased demand for X-ray work in hospital treatment, at the request of the Medical Department, the apparatus was transferred to RPH, also close to Hancock's office.¹⁸

RPH appointed Hancock honorary radiographer in 1898, a post he held for the next 22 years.¹⁹

Hancock again took long service leave in September 1905 and travelled to England. Before leaving WA he had made arrangements with the PWD to oversight the British contractors constructing cranes for the then relatively new inner harbour at Fremantle. He reported in part:²⁰ " With the approval of Mr Palmer, (WA's engineering representative in London) I visited on several occasions Messrs Stothert and Pitt's Works at Bath, and the British Westinghouse Company, Manchester, where the capstans and electrical gear were being made; the Electric Crane Company's works at Glasgow, and the General Electric works at Birmingham, where the motors and electric gear for the cranes were being constructed. I saw that the machinery was fairly well in hand, and was present at the test of the motor made by Mr Palmer's representative. As the result of my visits to the works, I made several recommendations in which Mr Palmer concurred and which he instructed should be carried out."

His report also listed many other engineering works and factories which he visited, both in England and Europe.

The final sentence of the report stated simply ".....and I spent some time in examining various wireless telegraph systems." In later years Hancock noted that he began experiments with wireless telegraphy in 1902.⁹ (He was preceded by G P Stevens who had experimented with radio in WA in 1899).²¹ In 1905 Hancock patented an improved responder for wireless telegraphy. The description of the apparatus reminds one of some of the principles used in earlier X-ray tubes. The patent was accepted about a month after Hancock arrived in England on leave.²² No doubt he negotiated this acceptance.

He spent part of his long service leave in gaining information and experience in X-ray work at hospitals in London, Manchester, Paris and elsewhere.

In 1889 W J Hancock had been elected as an Associate Member of the Institution of Civil Engineers, London. He was elected to full membership on 18 December 1906.

In 1906 also, most likely before he returned to Australia, Hancock purchased, probably at his own expense, improved X-ray apparatus which was later installed in more commodious rooms provided on his advice in a new wing of RPH.

In the earlier years during which the X-ray work was carried out, Hancock visited various centres - Bunbury, Coolgardie, etc - with his own portable apparatus, thus rendering valuable assistance to the medical profession in those places.

It was not until 1913 that RPH decided to procure its own X-ray plant and it was in 1914 that these new appliances were installed in the hospital, shortly before the outbreak of the Great War. After a brief period of use some of the new plant was commandeered for war purposes and Hancock's own plant was again commissioned for hospital work.

During these years as an honorary radiographer Hancock carried out his engineering duties during the day while giving his own time to radiological work in the afternoon and evening.

By today's standards there were no large electrical installations during this period, but annual reports of the PWD show that Hancock turned his engineering hand to a multiplicity of activities - electrical installations of all types in various buildings belonging to the State and Federal Governments, lift installations, Government Tramway work, drafting of regulations for mines electricity, electrolytic systems to prevent corrosion of main water supply and gas pipes, telephone systems, remote control of timeballs and other works.

In addition to the continuing work with the development of Fremantle harbour, he carried out similar development of the Bunbury harbour. He also designed the electrical work for the then important Wyndham Meat Works in the Kimberleys.

Up to the time that Perth City Council took control of the metropolitan electrical supply in 1913, it is estimated that Hancock had oversighted the installation of 31 electrical generating plants.

5. 1915 - 1921

During the Great War Hancock carried on his radiological work under adverse conditions, which resulted from the difficulty of obtaining new X-ray tubes, photographic materials and assistance with the photographic work. Hancock carried out all X-ray work at the Military Base Hospital, Fremantle, in co-operation with the staff, taking skiagrams and giving treatment in over 3000 cases. He was made an Honorary Lieutenant of the Australian Army Medical Corps at that time.

In the Perth Public Hospital Annual Report for 1916 Hancock inserted a brief report (the only time he did so apparently). This noted that during 1915 and 1916 " the new X-ray plant was still being used by the Military Department as an Auxilliary Radio-Telegraph Station, and I again use my private X-ray plant for all cases." ²³

During this period of his life Hancock delivered two papers of note - one to the Royal Society of WA, the other to the WA Institution of Engineers.

His illustrated paper read before the Royal Society of Western Australia on 12 October 1916 was simply titled "X-rays".²⁴ He went through the history, theory and practical aspects of X-rays in a broad sense and also discussed some of his work at RPH.

It is generally accepted that Hancock was made an Honorary Member of the British Medical Association. It is further thought that he might have had the title bestowed after the delivery of his paper described above.

If it was the intention to bestow this honour on Hancock, it does not appear to have been officially ratified by the BMA.²⁵

The Western Australian Institution of Engineers elected Hancock as their President for 1917 - 1918. His Presidential Address, delivered on 4 April 1917, is a most interesting document.⁹ It is largely a relation of his experience as an engineer in WA, thus it is a history of the early years of telegraphs, telephones, electrical plants, radiotelegraphy and tramways in Western Australia.

The paper mentions in passing that a syndicate was formed to build an electric transmission line from Northam, 100 km east of Perth, to the then new eastern goldfields at Coolgardie in the 1890's. The scheme fell through, but it is interesting to note that it was not until the 1980's that such a line was built from Perth.

The most prescient aspect of Hancock's address was his suggestion to harness solar power. After pointing out that coal and the like were not in unlimited supply, he said "the direct solar heat, of which Australia receives such a bountiful supply, may also someday be used as a source of energy under special circumstances."

His address also contained what was more or less a direct attack on the WA Government's decision to install a 40Hz power system at the new East Perth power station. Hancock pointed out that 50Hz was the standard in Britain and also the more populous Australian States. His judgement was vindicated when the Perth metropolitan supply was converted to 50Hz in the early 1950's.

The closing paragraphs of Hancock's delivery dealt with engineering education, a subject which greatly interested him. He was a member of the Senate of the University of WA, 1915-1927.²⁶

The Institution of Engineers, Australia, was formed in 1919, absorbing all similar state organisations. Hancock was admitted as an Associate Member of the Institution on 25 November 1920. He became a Member in 1924 and, at some later date, a Life Member.

Upon the appointment of Dr Donald Smith as Honorary Radiographer to RPH in 1920, Hancock was made Consultant Radiographer, a position he held until his death in 1931.

In 1903 Hancock first noticed his hand was affected by X-rays. In spite of treatment the damage steadily extended as the deadly effects of radiation were not fully understood.

As the years went on his health declined and he retired on 30 June 1921, although after taking leave that was due to him, his official retirement date was 7 January 1922.²⁷ It was estimated that up to this time, he had taken 30,000 skiagrams.

6. 1922 - 1931

The WA State Government granted Hancock a pension of 317 pounds per annum, ie 60% of his annual salary. This had to be agreed to by the Executive Council as he was under 60 years of age.²⁸

From this time Hancock's health deteriorated. Also, as he had been open handed in money matters, in particular purchase of X-ray equipment from his own pocket, his financial affairs were in a sad state (he had among other things sold a valuable stamp collection to keep solvent). His plight was brought before the WA Parliament in 1924. A motion was moved "to compensate him for loss and suffering endured through his honorary work as radiographer..." at RPH and the Fremantle Base Hospital during the war.²⁹ The debate was adjourned and when continued a few days later the members were advised that Hancock "...has personally taken exception to any gratuity or assistance being granted to him...", as his work had been of an honorary nature. Debate was adjourned again.³⁰ At the continuance the House was told that Hancock should be compensated as "...he is far too much of a gentleman to do honorary work and then, when adverse circumstances have befallen him, use that honorary work as a lever to secure recompense." This time the members voted in favour of a special allowance for his work at RPH, and to request the Federal Government to compensate him for his work in the Military Base Hospital at Fremantle during the Great War.³¹

In the event, the WA Government granted Hancock a "compassionate allowance" of 156 pounds per annum early in 1925, dating from the time the matter was first raised in Parliament in 1924.³²

The Prime Minister had been contacted in regard to compensation for Hancock's work at the Fremantle military hospital during the war. In January 1925 the Prime Minister's Department advised WA's Premier Collier that "...the Commonwealth Government have decided in view of Dr Hancock's long continuing self sacrificing devotion to duty...and having in mind his special services to the Commonwealth during the war period, to grant him the sum of one thousand pounds as a mark of their appreciation of his work and sympathy for his affliction."³³

Turning back to 1924, Hancock had received recognition in other ways. On 16 May 1924 the University of WA conferred on William John Hancock the honorary degree of Doctor of Science, naming him for his work on behalf of the University and activity in the radiological field.³⁴ From that time he was always referred to as "Dr Hancock."

Shortly after, on 8 July 1924 (the Kelvin centenary year) the Royal Society of WA awarded him the Society's first gold medal "... for his distinguished pioneer work in radiology in this State of Western Australia."³⁵ On its obverse the medal held a portrait of Lord Kelvin whose brother, Professor James Thomson, was an uncle of Hancock's.

Hancock was too ill to attend on both the above occasions. His wife received the honours on his behalf.

From this time, surviving details of Hancock's life are sketchy. He spent time in England and Europe trying to alleviate his illness, caused by radiation, without success. He died suddenly at London on 26 August 1931.³⁶ He was cremated and his ashes scattered in the grounds of the University of Western Australia.

7. 1932 - 1957

Honours to the memory of Hancock took various forms after his death. The first of these was a stained glass window in Winthrop Hall at the University of Western Australia. This was dedicated on 9 February 1934. It had been financed by donations from the University, British Medical Association, Royal Society of WA, Institution of Engineers, Australia and the University Engineers' Club.³⁷

On 3 March 1936 a face mask to commemorate Hancock's services to the nation was unveiled at the Applied Anatomy Museum of the Australian Institute of Anatomy, Canberra.³⁸ A plaque to further honour Hancock was erected next to the face mask in 1954.³⁹ The Institute of Anatomy closed in 1984 and the face mask is now in the possession of the National Museum of Australia.⁴⁰

William Hancock married Ida Lovegrove in December 1910. (She was the daughter of Dr Thomas Lovegrove, Principal Medical Officer of WA, 1895-1908). They had no children. Mrs Hancock died in England in August 1943. Her ashes, like those of her husband, were scattered in the grounds of the University of WA. Mrs Hancock left a legacy of one thousand pounds towards founding a radiology museum at RPH in memory of her husband. The Hancock Memorial Museum in the Department of Diagnostic Radiology at RPH was duly opened in October 1957.⁴¹

8. CONCLUSION

William John Hancock was a selfless man who devoted his life to alleviating the suffering of his fellow man. The many mentions of him being 'a martyr to X-rays' ring true. His education and experience as an engineer would have been of inestimable value in the construction, maintenance and operation of the radiological apparatus that was so dear to his heart.

9. ACKNOWLEDGEMENTS

Miss Maude Dunman kindly supplied much valuable information on her uncle, William John Hancock. Christine Shervington, Archivist of the University of WA and Dr T Chakera, Head of the Department of Diagnostic Radiology, Royal Perth Hospital, were also most helpful in allowing access to their records of Hancock's activities. David McBean kindly commented on the manuscript.

10. NOTES & REFERENCES

- Hancock always gave his date of birth as 2 May 1864. As his mother gave birth to another son, Henry, in August 1864, WJH must have been born in 1863. (It was not mandatory to register births in Ireland until 1864).
- Correspondence with University of Glasgow, 1987.
- Correspondence with the Institution of Civil Engineers, London, and Telecom Eireann, Dublin, 1987. (Telecom Eireann have no extant records regarding WJH's service in the 1880's - the quote is from Hancock's application for full membership of I.C.E. in 1906).
- Colonial Secretary's Office, Perth (CSO). File Register 1885/86. Battye Library Perth, accession (BL) 554, Vol 22, file 5147. Letter received 17.10.1885. The file has not survived.
- West Australian 8.3.1886, p3.
- CSO file 5010/84 "Telephone Exchange Between Perth and Fremantle" BL527. [This does not cover opening of either exchange].
- Moynihan J F. Telephony in Western Australia 1887 - 1987. Monograph, in draft.
- Buddrige R. Who was Connie Letch?, Telecom WA February 1981, pp12, 13
- Proceedings of the Western Australian Institution of Engineers. Presidential Address by WJ Hancock 4 April 1917. BL620 Pro.
- Western Australian Government Gazette (WAGG) 19.12.1889, p748.
- WAGG 18.9.1890, p687.
- See for example minutes of evidence of the following Royal Commissions: (a) into the WA P&T Department 1899, passim (b) into the Federal Post Office, 1908 - 1910, especially pp853, 854.
- Australian Archives WA. Accession PP45/1, box 2, file 330/93 "Abolition of the title of Superintendent of Telegraphs". (In extant private papers of Hancock's he titles this file "Persecution of WJ Hancock by Sholl").

14. Patent Office, London. Index of Applications for Patents in 1894, p130. "Hancock WJ - Brackets for telegraph etc insulators". Application No 3897 of 23.2.1894. (Correspondence with the Patent Office, London, 1987/88 confirmed that no patent was issued).
 15. West Australian 9.9.1895, p5.
 16. WA Blue Book (Civil Establishment List) 1894, p347.
 17. Anon. Salute to the X-Ray Pioneers of Australia, W Watson & Sons Ltd, Sydney 1946.
 18. University of WA: Archives file (UWAA) 1486.
 19. The many biographies of WJH quote him as first being appointed an honorary radiographer in 1898. However he was not listed among the honorary staff in the Perth Public Hospital Annual Reports until 1903. Possibly the 1898 appointment was of a non-official nature.
 20. PWD report for the six months ending 30.6.1906, p39.
 21. Moynihan JF, All the News in a Flash, Telecom and IE Aust. Perth, 1988, p125.
 22. Great Britain Patent Office: Patent 13327 of 1905 "Improvements in Responders for Wireless Telegraphy". Accepted 23.11.1905.
 23. Report of the Perth Public Hospital for the year ending 30 June 1916, p14. Hancock's page of the report is dated 28.2.1917.
 24. Journal and Proceedings of the Royal Society of Western Australia, Vol 3, 1916-1917, pp17-35 "X-Rays" by WJ Hancock.
 25. Discussion/correspondence with Australian & British Medical Associations, 1987.
 26. WAGG 5.3.1915, p1180.
 27. West Australian 14.6.1921, p60, see also 22.7.1921, p69: See also WAGG 24.2.1922, p358.
 28. WA Exec Council Minute 551 of 22.2.1922. BL1658.
 29. WA Parliamentary Debates 1924, pp968-970 (24.9.1924).
 30. ibid pp1133-1135 (2.10.1924).
 31. ibid pp1546-1548 (29.10.1924).
 32. WA Exec Council Minute 294 of 28.1.1925. BL1658.
 33. WA Premier's Dept file 35/1925 "Prime Minister's duplicate correspondence from 1.1.1925". BL1496. (no other official papers on this matter have survived in either Perth or Canberra archives): See also West Australian 25.12.1924, p40.
 34. UWAA 1486: See also West Australian 17.5.1924, pp11, 12 30.
 35. Royal Society of WA ibid Vol 10, 1923-24, ppvii-xix: See also West Australian 8.7.1924 p6; 9.7.1924 p7.
 36. Death Notices & Obituaries: Times (London) 28.8.1931, p1: West Australian 31.8.1931 p14; 1.9.1931 p8; Journal of IEE (London) Vol 71, 1932, p987: Journal of IE Aust, Vol 4, 1932 pp403, 404: Medical Journal of Australia Vol 2, 1931, pp465, 466.
 37. UWAA 3472: See also the West Australian 9.2.1934 p18; 10.2.1934 p10.
 38. UWAA 3472: See also Canberra Times 4.3.1936 p2.
 39. Gazette of the University of WA, May 1954, p11.
 40. Correspondence with the National Museum of Australia, 1987.
 41. West Australian 22.10.1957 p6.
11. GENERAL REFERENCES
- i. Australian Dictionary of Biography, Vol 9, 1983, pp183,4.
 - ii. Royal Perth Hospital Journal: Vol 2 No 1 (1940) pp14,37; Vol 8 No 6 (1954), pp30-34; Vol 9 No 6 (1956) pp259-263; Vol 10 No 3 (1957) pp118-123; Vol 17 No 5 (1972) pp293-295.
 - iii. File on WJ Hancock at Hancock Memorial Museum, RPH.
 - iv. West Australian 18.12.1931 p18b (tribute by PH Fraenkel, Professor of Engineering, University of WA.)
 - v. Bolton G C & Joske Prue, History of Royal Perth Hospital, RPH, 1982.
 - vi. Alexander F, Campus at Crawley, UWA Press, 1963.
 - vii. Le Page J, Building A State, WA Water Authority, Perth, 1986.